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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,352	12/29/2000	Arthur Ray Alexander	9216	8424

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT PAPER NUMBER

2841

DATE MAILED: 12/19/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,352

Applicant(s)

ALEXANDER ET AL.

Examiner

Ishwar B Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8 and 17-19, drawn to a printed circuit board, classified in class 361, subclass 793.
 - II. Claims 9-16, drawn to a method for use in suppressing electrical noise in a printed circuit board, classified in class 29, subclass 832.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as the loss element and the capacitive element can be placed on the same layer instead of placing them in the different layer. Further it is not necessary to place the loss element within an internal power or ground layer. Further the resistor can even be placed with in the via hole. Further the product can be made by placing the capacitive element either on the circuit board or with in the circuit board.



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3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with John D. Cowart (38,415) on November 26, 2001, a provisional election was made without traverse to prosecute the invention of group I, a printed circuit board, claim 1-8 and 17-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-16 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. Claims 1-2,6 and 17 rejected under 35 U.S.C. 102(e) as being anticipated by Harada et al., US Patent No. 6,198,361, hereafter referred to as Harada.

Regarding claim 1 and 17, Harada discloses a printed circuit board that includes:

a power layer for use in providing electrical power to circuit components (power supply layer 23, see figure 7-8, column 8, line 24-40);

a ground layer for use in carrying electrical current away from the circuit components (ground layer 22, see figure 7-8, column 8, line 24-40); and

a loss element connected electrically between the power layer and ground layer to suppress electrical noise caused by changes in current flow in the circuit components (a plurality of capacitor 28 and resistor 29 series circuits disposed at predetermined interval between the power supply layer and ground layer, see figure 7-8, column 8, line 40-50).

Regarding claim 2, Harada further discloses a capacitive element connected in series with the loss element between the power and ground layers (a plurality of capacitor 28 and resistor 29 series circuits disposed at predetermined interval between the power supply layer and ground layer, see figure 7-8, column 8, line 40-50).

Regarding claim 6, Harada further discloses loss element includes a resistor (a plurality of capacitor 28 and resistor 29 series circuits disposed at predetermined interval between the power supply layer and ground layer, see figure 7-8, column 8, line 40-50).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-5,7-8 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., US Patent No. 6,198,361, hereafter referred to as Harada, as applied to claim 1-2 above.

Regarding claims 3-5 and 18, the applicant is claiming various locations of the loss element and the capacitive element in the printed circuit board, such as the loss element and the capacitive element reside in two different layers of the circuit board as claimed in claim 3, loss element in an internal layer of the circuit board as claimed in claim 4 and loss element within an internal power or ground plane as claimed in claim 5 and 18. However the loss element on internal layer or within an internal layer is known in the art and will depend upon the space available and the ease of manufacturing for the specific requirement for the control of noise and interference. Therefore, it would have been obvious to provide a circuit assembly of Harada with the capacitor and loss element as claimed in claim 3-5 and 18, in order to have desired noise control with the available space in the circuit assembly.

Regarding claim 7, the applicant is claiming the resistor has a resistance value on the order of 1-10 ohms. Though, Harada does not disclose the a resistor with a value of 1-10 ohms, it will depend upon the level of noise control required in the system and further the resistor with the resistance value of 1-10 ohms in known in the art. Therefore, it would have been obvious to provide a circuit assembly of Harada with the resistor having resistance value on the order of 1-10 ohms in order to have the desired level of noise control.

Regarding claim 8 and 19, Harada does not disclose the resistor formed from a polymer thick film (PTF). However the use of polymer thick film for resistor is known in

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the art, and type of material used will depend upon specific combination of the material and method used for the manufacturing of the circuit board assembly. Therefore, it would have been obvious to provide a circuit assembly of Harada with the resistor formed from a polymer thick film (PTF) in order to have the specific combination of material and method for the manufacturing the assembly with higher productivity. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125, USPQ 416.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Howard et al., Harada et al., Novak, Klaser, Johnson, Lockwood et al., Ehman et al., Weinberg, Novak, Morris et al., Sasaki et al, discloses circuit board similar to applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar B Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (703) 308 3301. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
December 15, 2001



Klune
Primary Examiner